IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Nelson Gonzalez et al.	Art Unit: 2628
Application No.: **10/689,716**	Examiner: Joni Hsu
Filing Date: October 22, 2003	Attorney Ref. No.: 19463-0002
For: MOTHERBOARD FOR SUPPORTING MULTIPLE GRAPHICS CARDS	Confirmation No.: 3956

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

COMES NOW the Appellant to present this Appeal Brief in support of the appeal of the rejection of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 in the above-captioned patent application. The Notice of Appeal having been timely filed on January 16, 2007 and a Petition for a Five Month Extension of Time filed herewith, Appellant hereby timely submits this Appeal Brief.

It is not believed that any further extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. If, however, additional extensions of time are necessary to prevent abandonment of this application or dismissal of this appeal, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to the Appellant's Deposit Account 50-1349.

For the following reasons, Appellant respectfully submits that the rejection of each of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 in this application is in error, and therefore respectfully requests reversal of the rejections.

TABLE OF CONTENTS

I. Real Party in Interest

The real party in interest is Alienware Labs Corp., a corporation of the state of Florida.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of Claims

Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 are pending. No claims are in condition for allowance. Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 stand rejected by the Office Action dated July 14, 2006, and are on appeal. The July 14, 2006 Office Action is the third Office Action received for the subject application and follows a Final Rejection dated October 25, 2005. Claims 1, 41 and 48 are the only pending independent claims.

IV. Status of Amendments

All amendments to the claims have been entered.

V. Summary of Claimed Subject Matter

The invention provides a novel and non-obvious motherboard that accepts multiple high performance video cards and coordinates those multiple high performance video cards to provide improved video performance to a display device. As described in the specification of the present application, it is highly desirable to provide a motherboard having multiple high-speed video card slots that are capable of receiving high performance video cards that can then be operated in parallel. In this way, the invention allows the leveraging of multiple standard, off-the-shelf video cards.

VI. Grounds of Rejection to be Reviewed on Appeal

A. Whether Claims 1-7, 29, 30, 32-34, 41 and 44-48 are unpatentable under 35

U.S.C. § 103(a) over U.S. Patent Application No. 20040088469A1 to Levy ("Levy") in view of U.S. Patent No. 6,295,566 to Stufflebeam ("Stufflebeam").

B. Whether Claims 50-52 are unpatentable under 35 U.S.C. § 103(a) over Levy and Stufflebeam in view of U.S. Patent No. 5,546,530 to Grimaud et al. ("Grimaud").

VII. Argument

A. Introduction

In the July 14, 2006 Office Action, claims 1-7, 29, 30, 32-34, 41 and 44-48 were rejected under 35 U.S.C. §103(a) over U.S. Patent Application No. 20040088469A1 to Levy ("Levy") in view of U.S. Patent No. 6,295,566 to Stufflebeam ("Stufflebeam"). Claims 50-52 were rejected under 35 U.S.C. § 103(a) over Levy and Stufflebeam in view of U.S. Patent No. 5,546,530 to Grimaud et al. ("Grimaud"). For at least the following reasons, these rejections are in error and should be reversed.

B. Legal Standards

Claim construction begins with the words of the claims. *Karlin Tech., Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971 (Fed. Cir. 1999). Claim language should be interpreted as one reasonably skilled in the art would have interpreted the claim at the time of the patent application date. *Vivid Techs., Inc. v. American Science & Engineering, Inc.*, 200 F.3d 795, 804 (Fed. Cir. 1999); *Wiener v. NEC Elec., Inc.*, 102 F.3d 534, 539 (Fed. Cir. 1996). Where the claim term has no specialized meaning to persons of skill in the art, the ordinary meaning of the words to those of ordinary skill in the art controls, unless the evidence indicates that the inventor used them differently. *Karlin*, 177 F.3d at 971. Such evidence includes the specification and prosecution history, both of which must be analyzed to determine if the inventor limited or redefined any of those terms. *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882-84 (Fed. Cir. 2000); *Vivid Techs.*, 200 F.3d at 804. If claim language is not clear on its face, then intrinsic evidence also should be consulted to resolve the lack of clarity. *Interactive Gift Express, Inc. v.*

Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001).

Claimed subject matter is obvious in light of the prior art if it would have been obvious to one of ordinary skill in the relevant art at the time the invention was made. 35 U.S.C. § 103(a). In considering the entire prior art in the relevant field, the claimed subject matter is obvious if the prior art "would have suggested to one of ordinary skill in the art that this [invention should be made] and would have a reasonable likelihood of success." *In re Dow Chemical Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988).

In determining obviousness, the following four factors must be considered: (1) the scope and content of the prior art; (2) any differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art; and (4) any secondary considerations evidencing non-obviousness, such as commercial success, copying, long felt but unsolved needs, failures of others, unexpected results, etc. *KSR Int'l Co. v. Teleflex Inc.,* 550 U.S.___, ___,82 USPQ2d 1385, 1391 (2007), *citing Graham v. John Deere Co. of Kansas City,* 383 U.S. 1, 17-18 (1966).

In *KSR,* the Supreme Court confirmed that, in evaluating obviousness, "an expansive and flexible" approach is to be taken, *i.e.,* "rigid and mandatory formulas" are improper. 82 USPQ2d at 1395-97. More specifically, the Court indicated that combining prior art elements to perform their respective established functions is likely to be obvious when it does no more than yield predictable results. *Id.* at 1395. Indeed, if a design need or market pressure to solve a problem having a finite number of identified, predictable solutions provides good reason for an ordinarily skilled person to pursue the known options within his or her technical grasp, and if such pursuit leads to the anticipated success, "it is likely the product not of innovation but of ordinary skill and common sense" and "[i]n that instance the fact that a combination was obvious to try might show that it was obvious under §103." *Id.* at 1397. Conversely, when the prior art teaches away

from combining known elements, discovery of a successful way to combine them is more likely not obvious. *Id.* at 1395.

Obviousness is not shown merely by demonstrating that each of the elements of a claimed combination was known in the art. Rather, "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine [or modify] the elements" as claimed. *Id.* at 1396. However, "any need or problem known in the field of endeavor at the time of invention and addressed by the patent" can provide such a reason, as the patentee's particular motivation/purpose does not control. *Id.* at 1397. Also, a precise teaching of claimed subject matter is not needed, as familiar items have obvious uses beyond their primary purposes, and one must consider inferences/creative steps that a person of ordinary skill ("a person of ordinary creativity, not an automaton") would have employed. *Id.* at 1396-97.

A long-standing obviousness test used by the Federal Circuit is the "teaching-suggestion-motivation" (TSM) test, under which a patent claim is proved obvious only if a teaching, suggestion or motivation *(i.e.,* a reason) to combine or modify prior art teachings is found in the prior art, in the nature of the problem, or in the knowledge of a person of ordinary skill in the art. *Id.* at 1391. The Supreme Court in *KSR* confirmed that "[t]here is no necessary inconsistency between the idea underlying the TSM test and the *Graham* analysis," as long as the TSM test is not applied rigidly or narrowly. *Id.* at 1396-97. According to Federal Circuit decisions consistent with *KSR,* the motivation/suggestion/teaching may but need not be found explicitly in the prior art, and the prior art may but need not be combined or modified for the same reasons contemplated by the inventor. *In re Kahn,* 441 F.3d 977, 987-88 (Fed. Cir. 2006) (cited with

approval in *KSR, id.* at 1396). Furthermore, "prior art" is broader than just the references sought to be combined, and motivation may be established based upon, *inter alia,* basic principles, common knowledge and/or common sense. *DyStar Textilfarben GMBH & Co. Deutschland KG v. C.H. Patrick Co.,* 464 F.3d *1356,* 1360-61, 1367 (Fed. Cir. 2006); *see also Aiza Corp. v. Mylan Labs., Inc.,* 464 F.3d 1286, 1291, 1294 (Fed. Cir. 2006) (decisions cited by KSR, *id.* at 1397, as providing "a broader conception of the TSM test" than the Federal Circuit's erroneous application of the test in *KSR).* Regardless, however, a conclusion of obviousness should be explicitly supported by "articulated reasoning with some rational underpinning" and not "by mere conclusory statements." *See KSR, id.* at 1396, *quoting Kahn.*

The circumstances under which prior art may be found to "teach away" from a claimed combination are narrow, *e.g.,* a reference must lead one in a direction divergent from the path taken by a claimed invention and not just disclose an alternative or indicate that a claimed combination resolves a different problem or is less desirable, inefficient or inferior. *KSR, id.* at 1399; *Ormco Corp. v. Align Tech., Inc.,* 463 F.3d 1299, 1308 (Fed. Cir. 2006); *In re Fulton,* 391 F.3d 1195, 1200-01 (Fed. Cir. 2004); *Nat'l Steel Car Ltd. v. Can. Pac. Rwy. Ltd., 357* F.3d 1319, 1339 (Fed. Cir. 2004). Also, the "obvious to try" consideration mentioned in *KSR* dovetails with the motivation analysis in that a skilled artisan not only must have been motivated to combine or modify prior art to achieve a claimed invention, but also must have had a "reasonable expectation of success in doing so." *Pfizer, Inc. v. Apotex, Inc.,* 480 F.3d 1348, 1364-69 (Fed. Cir. 2007).

The motivation inquiry begins with application of the so-called "analogous art" test.

This threshold test requires that each prior art reference relied upon be either (1) in the field of the inventor's endeavor or (2) reasonably pertinent to the problem with which the inventor was concerned, based on the judgment of a person having ordinary skill in the art. This test is related to the TSM test in that the TSM test "picks up where the analogous art test leaves off and informs the *Graham* analysis." *Kahn,* 441 F.3d at 987.

The level of skill in the art is determined entirely with reference to a hypothetical person of ordinary skill in the art presumed to be aware of all of the pertinent prior art. Relevant factors in determining the level of skill include the educational level of active workers in the field, the type of problems encountered in the art, prior art solutions to such problems, the rapidity of innovations in the art, and the sophistication of the technology. *In re GPAC, Inc.,* 57 F.3d 1573, 1579 (Fed. Cir. 1995). Determination of the level of skill is often critical to determinations of whether prior art is "analogous art" and whether one of ordinary skill in the art would have been motivated to combine (or modify) prior art references. *DyStar,* 464 F.3d at 136 1-63, 1370.

In order for secondary considerations evidence to be given substantial weight, the patentee must demonstrate that there is a nexus between such evidence and the merits of the claimed invention. *Ormco,* 463 F.3d at 1311-13; *GPAC,* 57 F.3d at 1580. In other words, such evidence must arise from the claimed invention, rather than from extrinsic influences such as unclaimed features, prior art features, marketing activities, etc. *Id.* (and cited cases).

C. The Rejections of Claims under 35 U.S.C. §103 is in Error

i. Levy

U.S. Patent Application No. U.S. Patent Application No. 20040088469A1 to Levy ("Levy") relates to a bus for flexibly establishing lanes of links, thereby allowing the bus to

adjust to connected devices as needed.

ii. Stufflebeam

U.S. Patent No. 6,295,566 to Stufflebeam ("Stufflebeam") relates to a computer with PCI slots that configured to allow additional devices to be inserted and existing devices to be removed or relocated without restarting the computer.

iii. Grimaud

U.S. Patent No. 5,546,530 to Grimaud et al. ("Grimaud") discloses a method and apparatus which allows animation information and processor power from a plurality of different sources to be combined for rendering complex graphical scenes which one machine would be incapable of doing alone. In one embodiment, Grimaud discloses a processor in the network provided with a copy of the hierarchical tree which enables it to render a complete image. However, each processor is responsible only for a portion of the entire image represented by a subtree below a selected node. Thus, when the control computer provides the list of changed nodes, each processor need render only the portion of the image which contains the selected subtree. After the plurality of processors compute their respective images, the image data is communicated to a buffer. The buffer also receives image data from other sources. The buffer combines the image data from all sources into a single image frame which is then stored in a frame buffer.

iv. The rejection of Claims 1-7, 29, 30, 32-34, 41 and 44-48 is in error

The rejection of claims 1-7, 29, 30, 32-34, 41 and 44-48 under 35 U.S.C. §103(a) over Levy in view of Stufflebeam fails to meet the above-referenced *prime-facie* requirements for obviousness-type rejections under 35 U.S.C. §103(a). Namely, at least one of the features recited in Appellant's claims is absent from the disclosure/teaching of Levy and/or Stufflebeam, either alone or in combination with each other.

The previous Office Action stated that Levy discloses high speed video card slots including at least one first video card slot and a second video card slot. Office Action at page 3, paragraph 7. However, Levy merely states that the attached devices may include "video cards." Appellant submits that Levy fails to disclose or suggest "a plurality of high speed video card

slots ...including at least one first video card slot and second video card slot," as recited in claim 1. Further, Levy does not provide any disclosure regarding the attachment and operation of two or more high speed video cards. Levy also does not provide any disclosure regarding slots for receiving multiple high speed video cards. The Office Action incorrectly interprets above quoted section from Levy as disclosing a plurality of high speed video card slots. However, Levy only suggests examples of components useable on a motherboard but does not teach of suggest the features of claim 1. In order for a reference to anticipate a claim or render a claim obvious, it must enable the subject matter that it is alleged to cover. Levy does not provide any disclosure that would enable the features of claim 1. Therefore, Appellant submits that Levy does not teach or suggest the features of claim 1 as described above.

Moreover, Appellant submits that Stufflebeam does not make up for the deficiencies in Levy. As described above, Stufflebeam merely addresses a configuration for adding or removing devices without turning off a computer. There is no suggestion in Stufflebeam that the invention further related to enhancement of motherboard design to include previously unfound features of multiple video card slots. In particular, Stufflebeam, similar to Levy, merely provides that video cards can be added to a motherboard without provided that multiple video cards can be concurrently connected to a motherboard, and that the motherboard provides multiple high-speed video card slots. Thus, the combination of Levy and Stufflebeam fails to teach or suggest the Appellant's claimed invention as recited in claim 1.

The previous Office Action also failed to adequately consider Applicants' Declaration Under 37 C.F.R. §1.132. As described in the Declaration Under 37 C.F.R. §1.132 ("Declaration") submitted April 20, 2006, the products implementing the Applicants' invention has achieved significant commercial success in the marketplace and represent a significant advance over the previous state of the art, including Levy and Grimaud. The success of these products is directly related to features claimed in Appellant's invention. In addition, as described in the enclosed Declaration, there has been significant copying of the Appellant's invention over conventional graphics systems. While Stufflebeam is newly cited following the submission of the Declaration, the same principles still apply - that no comparable devices existed prior to

Appellant's conception of the present invention as claimed and that the Appellant has had significant commercial success and copying by others. In response, the Action cites to Grimaud in support of the proposition that multiple graphic processors systems are quite known. This response fails to address Appellant's evidence that motherboards having multiple high-speed graphics slots, particularly having a scalable bas system, simply did not exist prior to Appellant's conception and commercialization of the present invention as claimed. In particular, the Action cites to a single line in the Grimaud specification regarding the addition of processors through available slots. Appellant readily admits that multiple graphic processor systems are known and existed prior to the conception of the present invention, but argue that these systems used multiple processors on a single slot (i.e., multi-processor video cards) or where processors resided on the motherboard, and one or more additional processors where added through a single slot. Even, assuming, *arguendo*, that multiple graphics processors may be connected to a motherboard via expansion slots, this does not address the present invention's claimed multiple high-speed graphics slots. As discussed in the Declaration, this advancement did not exist prior to the present invention, provides significant technical benefits, has been meet with significant commercial and critical success, and has been widely copied.

In view of the foregoing, Appellant requests reversal of the rejection of claims 1-7, 29-34, 41, 42 and 44-48.

v. The rejection of Claims 50-52 is in error

Claims 50-52 were rejected under 35 U.S.C. §103(a) over Levy and Stufflebeam in view of Grimaud. Appellants respectfully submit that Grimaud fails to make up for the above-noted deficiencies of both Levy and Stufflebeam.

As described above, Grimaud specification contains a single passage regarding the addition of graphics processors through available slots. There is no further suggestion or teaching in Grimaud that the computer contains multiple high-speed video card slots. As previously presented, "video card slot" has a very well defined meaning in the computer industry (not merely a slot for accepting a video card), and none of the three cited references contain the feature of multiple video card slots. Thus, it is submitted that the combination of Levy,

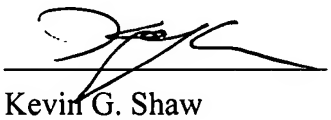
Stufflebeam and Grimaud fails to teach or suggest the features of claims 50-52.

VIII. Conclusion

For at least the foregoing reasons, Appellant respectfully submits that the subject matter of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52, each taken as a whole, are patentable. Accordingly, Appellant respectfully requests reversal of the rejections of Claims 1-7, 29, 30, 32-34, 41, 44-48 and 50-52 under section 103(a).

Respectfully submitted,

Dated: Aug. 16, 2007



Kevin G. Shaw
Reg. No. 43,110

HOGAN & HARTSON LLP
555 13th Street, N.W.
Washington, D.C. 20004
Telephone: 202-637-5600
Facsimile: 202-637-5910

Customer No. 24633

APPENDIX: CLAIMS ON APPEAL

1. A motherboard, comprising:

a chipset for managing data transfers within the motherboard;

a scalable interconnect connecting to the motherboard; and

a plurality of high-speed video card slots connected to the interconnect, the high speed video card slots including at least one first video card slot and second video card slot,

wherein the motherboard enables a first and a second video card to attach, respectively, to the at least one first video card slot and second video card slot, and wherein the motherboard enables the first and the second video cards to operate in parallel to output graphics data to a single visual display device.

2. The motherboard of claim 1, further comprising a switch connected to said interconnect, wherein said switch distributes bandwidth from said interconnect to said plurality of high-speed video card slots.

3. The motherboard of claim 2, wherein said interconnect comprises a x16 connection, and wherein said switch distributes bandwidth from said x16 connection to two x16 video card slots.

4. The motherboard of claim 1, wherein said interconnect comprises at least a x32 connection.

5. The motherboard of claim 4, wherein said interconnect is divided into two or more x16 connections between the chipset and the plurality of high-speed video card slots.

6. The motherboard of claim 1, wherein said interconnect comprises at least a x16 connection, and wherein said interconnect is divided into a x8 connection between the chipset and each of said plurality of high-speed video card slots.

7. The motherboard of claim 1, wherein said interconnect comprises a connection having at least 24 lanes, and wherein said interconnect is divided into a x8 connection between the chipset and one of said plurality of high-speed video card slots and a x16 connection between the chipset and another of said plurality of high-speed video card slots.

29. The motherboard of claim 1, wherein the interconnect comprises a first x16 connection to the first video card slot and a second smaller-scaled connection to the ~~to~~ second video card slot.

30. The motherboard of claim 29, wherein the second connection is at least one of a x1, x2, x4, and x8 connection.

32. The motherboard of claim 1, further comprising a peripheral slot connected to the interconnect, the peripheral slot having second prespecified dimensions, wherein the second dimensions differs from the first dimensions.

33. The motherboard of claim 1, wherein the first dimensions of the video card slots are selected to allow a graphics card to be coupled to any of the video card slots.

34. The motherboard of claim 33, wherein the graphics card is designed to be used with a x16 connection.

41. A motherboard for supporting multiple video cards, the motherboard, comprising:

a processor socket adapted to receive a central processing unit (CPU);

a scalable interconnect that provides data paths to the processor socket, wherein the scalable interconnect is selectively divided as needed to allocate the data paths; and

a plurality of high-speed video card slots connected to the interconnect, wherein each of the video card slots has first prespecified dimensions and is specifically adapted for coupling to a video card,

wherein the motherboard is capable of receiving substantially similar first and second video cards and facilitating parallel operation of ~~a~~ the first and a second video ~~card~~ cards to output graphics data to a single visual display device.

44. The motherboard of claim 41, wherein each of the video card slots is configured to couple with a graphics card designed to be used with a x16 connection.

45. The motherboard of claim 41, wherein the interconnect comprises a first data path and a second data path, each of the first and second data paths connecting the processor socket to different video card slots, the first data path being equal to or larger in scale than the second data path.

46. The motherboard of claim 45, wherein the second data path comprises at least one of a x1, x2, x4, and x8 connection.

47. The motherboard of claim 41, further comprising a peripheral slot connected to the interconnect, the peripheral slot having different dimensions from the video card slots.

48. A high performance computer, comprising:

a motherboard, a scalable interconnect including a first and a second data paths and a first and a second video slots, wherein the first and the second video slots connect, respectively, to the first and second data paths, the first data path being equal to or larger in scale than the second data path, wherein the first and the second video slots have a substantially similar physical configuration, and wherein the video slot physical configuration is selected to allow the first and

the second video slots video slots to accept a graphics card;

a first graphics card coupled to the first video slot; and

a second graphics card coupled to the second video slot,

wherein first and second video cards operate in parallel to output graphics data to a display device.

50. The motherboard of claim 1, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

51. The motherboard of claim 41, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

52. The computer of claim 48, wherein a display area of the display device is divided into first and second sections, said first video card performing graphics processing related to said first section; and said second video card performing graphics processing related to said second section.

EVIDENCE APPENDIX

No additional evidence is cited in this Brief.

RELATED PROCEEDINGS APPENDIX

There are no proceedings related to this appeal.